

LEWIS, (F. P.)

THE EYE

AS A FACTOR IN

FUNCTIONAL NERVOUS DISEASES.

BY

F. PARK LEWIS, M.D.,

BUFFALO, N. Y.

REPRINTED FROM THE TRANSACTIONS OF THE AMERICAN INSTITUTE
OF HOMŒOPATHY, 1888.



AUTHOR'S EDITION.
1888.

THE EYE AS A FACTOR IN FUNCTIONAL NERVOUS DISEASES.

BY F. PARK LEWIS, M.D., BUFFALO, N. Y.

No subject, perhaps, during the last ten years, has more profitably occupied the medical profession than the study of the sympathetic nervous system in the wonderful effects of reflex action in health and disease, and the mutual interdependence and correlations which are only now beginning to be understood.

It has come to be generally recognized that convulsions often arise from gastric or intestinal disturbances in children, and that we have asthenopia dependent upon a narrow prepuce or contracted urethra, gastralgia and dyspepsia resultant upon uterine and ovarian disease, and, more recently, neurasthenia and local neuralgia due to rectal ulcers, fistulæ or pockets.

That the eye has been an important element in local disturbances has also, for a long time, been well known, and it is within the experience of every oculist that circumorbital pains, the various forms of headache, and even vertigo may be the result of a refractive anomaly and be relieved by the adaptation of a suitable glass. But more recent investigations have determined that even such profound nervous diseases as hysteria, chorea, epilepsy and insanity, may be due to eye-strain, arising from imperfect balance of the muscles of the eye.

That the initiative in this line of work was taken by Dr. George T. Stevens, of New York, is beyond question, and while few, perhaps, are prepared to follow him to the limits of his enthusiasm, few, in the light of clinical facts, will be prepared to deny that he has opened a field of almost boundless possibilities. For if, as is prob-

able, only a certain proportion of neurotics have defective eyes, we must admit that, finding a method of relief for even these, is to find a missing factor in a complicated pathological problem.

Independent investigators, following the clew given by Dr. Stevens, have recently been developing the same line of study. So eminent a neurologist as Ranney, in a lecture delivered not long since before the New York Post-graduate Medical School, reports cases in his own practice where the relief of manifest ocular defects produced remarkable and unlooked-for benefit in various neuroses which for years had been looked upon as incurable. The cases which he cites included chronic epilepsy; excruciating headaches, with chronic diarrhœa and neuralgic paroxysms; melancholia, with morbid impulses; cerebral confusion and distress; an intractable, prostatic neuralgia; cerebral neurasthenia with pseudo-ataxia and chronic headache; chorea of thirty-one years' standing, affecting head, face and all of the extremities, etc. The records of three cases are all accessible, and are not, therefore, given in detail. Such results, however, coming from so careful an observer, sufficiently demonstrate the importance of this element in our clinical armamentarium.

Among the ocular defects which have a neuropathic tendency, hypermetropia (far-sightedness) stands first, not because it is the most disturbing element, but because it is most frequent. Myopia (near-sightedness), certainly of the refractive errors, is of the least importance unless complicated by some muscular insufficiency. Astigmatism can scarcely exist in the sensitive subject without resulting in a more or less serious nervous disturbance. Of the muscular defects a difference in height in the lateral visual planes develops and perpetuates the most intractable neurosis, although insufficiencies of the recti muscles, whether internal or external, may produce nervous disorders nearly, if not quite, as severe. The value of these quantities in the pathological equation depends largely upon the sensitive predisposition of the individual. Refractive errors in the young, strong eye in moderate degrees may for years occasion but slight discomfort and no neurosis. But in those more easily affected, even slight imperfections may seriously disturb the general nervous system, and clinical experience seems to verify Dr. Stevens's assertion that visual difficulties are "among the most prolific sources of nervous disturbances and more frequently than other conditions constitute a neuropathic tendency."

In every case of chorea examined by the writer some defect has been found, either refractive or muscular, and usually both.

The number and variety of nervous symptoms coming from eye-strain will be illustrated by the following case of hypermetropia (far-sightedness) with muscular insufficiency: Mrs. C., a highly organized and sensitive brunette, thirty-two years of age, has been subject for years to severe pain in back of head and neck with feeling as though the head were drawn backwards; soreness and pricking in the spine; has been unable to endure the jar of a carriage in riding; frequent nervous chills, with violent trembling when under excitement; at such times, also, difficulty in swallowing food; seeming contraction of the pharynx; sleeplessness with twitching and jerking of the limbs; creeping sensation, involving back and limbs, becoming at times almost unbearable.

An examination of the eyes revealed the following condition: In each eye the vision was $\frac{1}{7}\frac{5}{0}^{\circ}$ increased by a convex glass of 1 d. to $\frac{1}{3}\frac{5}{0}^{\circ}$. The strength of the various muscles at 20 feet was of the internal rectus 18° , external rectus 8° , superior rectus 1° inferior rectus 2° . Apparent slight hyperphoria.

Suitable glasses were prescribed, with complete relief of all the nervous symptoms, although there is a tendency for them to recur if the glasses are not worn.

In any functional nervous disturbance—and from what has been said, it will follow that many cases must now be recognized as functional which have been considered organic—the diagnosis cannot be concluded until the *eyes* have been thoroughly examined. If the eyes are far-sighted or near-sighted, or astigmatic, the proper lens must be employed. If the muscles are not strong enough they must be strengthened by proper exercise, if necessary with prisms, and properly chosen remedies will frequently be of great value. But there is a class of cases in which none of these ordinary modes of treatment will suffice.

As the eyes may be congenitally unlike, so the muscles may from birth be incoördinate. In these cases the diagnosis is often most difficult; to them the most serious nervous troubles are frequently due, and for them there is but one remedy—tenotomy.

Operative measures for the correction of obvious muscular insufficiencies have been resorted to in numerous instances for many years. But the correction of slight defects by cutting the tendon has not only

been looked upon with distrust but its justification questioned by many of the ablest men in the profession. Even such a man as the late Dr. Loring was led to say that he regarded the work done in this line during the last few years as one of the saddest pages in the history of ophthalmology, and in this he was seconded and supported by the equally able Dr. Derby, of New York.

But when we see the failure of every other known method, followed by such astonishing results as those reported by Stevens and by Ranney, we are constrained to the belief that the unfortunate results which have sometimes occurred have been due either to the fact that the cases were not properly chosen or that the operation was not skilfully performed.

The essential lesson to be drawn from a review of this whole subject is that operative measures are never warranted unless these are the only means by which a cure can be effected. And while it may not be necessary for the surgeon to have employed every known means of treatment before determining upon a tenotomy, he must be assured of his diagnosis and satisfied that neither remedies, prisms nor lenses of any character, whatsoever, can modify the condition. Even then the proportion of cases requiring operation will be found by no means small.

Of the various deviations to which the eye is subject, a difference in height of the visual planes most seriously affects the nervous system. This condition is technically called hyperphoria. Next in frequency and importance is a tending inward of the planes of vision or esophoria, and third, a deviation outward or exophoria. Any of these may coexist with absolutely perfect sight and no obvious malposition of the eyeballs. While usually in these conditions the eyes are not strong, the other nervous symptoms are so much more prominent that the eye difficulty is looked upon more as a result than as a cause, and is often regarded as a symptom of some serious cerebral or spinal disease. It is only after the most careful and, in many instances, frequently repeated examinations that one of the forms of heterophoria will be revealed.

The operation is one of extreme delicacy, and even in practiced hands the greatest caution must be observed in order that the condition may not be complicated and the operation ruined by relaxing the muscles too much.

In fit cases, when the work is rightly done, few operations in sur-

gery give more satisfying results. The following sketches synopsised from my own case-book will indicate the value of this work :

Miss G., aged 45, came to me in January last, bringing an introductory letter from Dr. J. T. Cook, of Buffalo. She could not remember when her eyes were not painful ; had always been obliged to hold objects close to the eyes in order to see clearly ; complained of pain in back of the head, which at times became very severe ; frequent wakeful nights ; great nervousness, with dread of going anywhere or seeing any one, and gradual increase of all these symptoms. An examination revealed a myopic astigmatism for which concave cylinders of $\frac{1}{2}$ a dioptric each and of proper angle were prescribed. There was also a difference in the height of the planes of the eyes of 1° (left hyperphoria) and a difference in the planes laterally of 5° (exophoria). The cylinders prescribed were tried for a month, but without affording the least relief, rather causing discomfort.

On the 9th of February, the left superior rectus was tenotomized, lowering the eye to the extent of 1° . The relief was almost immediate. Without further operation the interni gradually grew stronger, and by the 13th of April the exophoria had entirely disappeared. The glasses could then be used with perfect comfort, the nervous symptoms have now almost entirely gone, and the general health is better than it has been in years.

Mrs. N., of this city, aged 38, has been a confirmed neurotic for years ; has worn lenses for hypermetropic astigmatism which I had myself prescribed ten years before. With the glasses her *vision* was perfect. Has, nevertheless, had difficulty in using the eyes for five minutes at a time. The following have been among her more prominent symptoms : Incessant pain in back of neck at the base of the brain ; sensation as if ice-cold water were being poured over the head ; ringing and rushing sound in the ears, with beating and pounding in the head sufficient to almost drown the sound of her own voice ; most intractable insomnia for one entire month, getting no sleep excepting by the use of strong doses of opium and chloral ; catching of breath and gasping as if she could never breathe again ; excessive palpitation of the heart, so as to jar the whole body and prevent her from climbing an ordinary flight of stairs without stopping several times to rest, but *without any organic heart lesions* ; a sudden noise would startle her so that she would tremble for half an hour ; a

fluttering and sensation of weakness in the abdomen which could only be controlled by wearing a tight bandage; great pain in back, bearing-down sensation, with aching extending to the knees. Her physician diagnosed a passive congestion of the uterus, which he considered dependent upon a depressed nervous condition. She had also numberless other nervous symptoms which would apparently quite warrant this diagnosis. An examination of her eyes developed the fact that there was a difference in height of the planes of the eye of 1° (right hyperphoria) with a turning inward (lateral esophoria) of 3° . A tenotomy of the superior rectus lowered the right eye the necessary 1° and subsequently two tenotomies relaxed the left internal rectus 3° . The result was a complete and almost immediate relief of every one of the nervous symptoms.

Other similar records might be transcribed, but it is needless to multiply cases of this kind. Enough has already been said to demonstrate, beyond question, that no case of functional nervous disease, no matter how profound its nature, can be pronounced incurable until it has been conclusively proven that the eye muscles are properly adjusted, and that, in short, the eyes are optically and organically perfect.